

NAME:

Abstract Algebra
Math 521A
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Review for first exam

- Be able to state accurately and precisely these main theorems:
 - Division theorem;
 - The gcd of two integers may be written as a linear combination of them;
 - Unique factorization.
- Know how to:
 - Prove fundamental results about divisibility.
 - Use the Euclidean algorithm to find a gcd, and to express the gcd as a linear combination.
 - Compute in \mathbb{Z}_n (don't forget to simplify!).
 - Find the inverse of an element of \mathbb{Z}_n , when possible (Euclidean algorithm or trial and error).
 - Given $a \in \mathbb{Z}_n$, find $b \in \mathbb{Z}_n$ such that $ab = 0$, when possible.
 - Prove every nonzero element of \mathbb{Z}_n is either a zero divisor or a unit.
 - Find solutions to an equation in \mathbb{Z}_n , by trial and error, or by using inverses, or zero divisors.